WHAT IS CLAIMED IS:

1. A method for providing simulated audio communications to a simulation system, comprising the steps of:

5   linking as a data network, a server and two or more client systems;

sampling audio input at a first client system, resulting in sampled audio data;

transmitting the sampled audio data to the server;

10   using the server to process the sampled audio input, by applying at least one transceiver model and at least one impairment model, wherein the transceiver model injects transceiver effects into the sampled audio input and the impairment model injects transmission effects

15   into the sampled audio input, thereby resulting in processed audio data;

transmitting the processed audio data to a second client system; and

converting the processed audio data to an analog

20   audio signal at the second client system.

2. The method of Claim 1, wherein the simulation system provides tactile simulation, and further comprising the steps of using tactile simulation to

25   select a transceiver, and of transmitting data representing the selected transceiver to the server such that the selected transceiver corresponds to the transceiver model.

3. The method of Claim 1, wherein the simulation system provides a visual simulation, and further comprising the step of providing a visual display corresponding to control of one or more audio qualities

5 of the audio communications.

4. The method of Claim 1, wherein the simulation system provides a visual simulation, and further comprising the step of providing a visual display

10 depicting one or more audio qualities of the audio communications.

5. The method of Claim 1, wherein the transceiver model represents at least a type of receiver,

15 transmitter, or transceiver.

6. The method of Claim 1, wherein the transceiver model represents at least the transceiver power.

20 7. The method of Claim 1, wherein the impairment model represents one or more attributes from the following group: channel fading, multi-path fading, propagation delay, noise (including Gaussian), Doppler shift effects, and gain control.

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8. The method of Claim 1, wherein the transceiver model represents a wireless receiver and the impairment model represents one or more attributes from the following group: filtering, noise injection, line-of-

30 sight effects, propagation losses, and signal fading.

9. The method of Claim 1, wherein either the first client system or the second client system or both are transceiver systems.

10. The method of Claim 1, wherein the impairment model uses dynamic simulated entity data.

11. The method of Claim 1, wherein the dynamic simulated entity data is velocity data of the first client system or the second client system or both.

12. The method of Claim 1, wherein the dynamic simulated entity data is the distance between the first client system and the second client system.

13. The method of Claim 1, wherein the impairment model is a multipath model, based on velocity of the second client system and radio frequency.

14. The method of Claim 1, wherein the impairment model is a Doppler effects model, based on velocity of the second client system and the angle between the first client system and the second client system.

15. The method of Claim 1, wherein the impairment model is a channel noise model, based on Gaussian noise generator output data whose level is controlled by path gain.

16.   A system for providing simulated audio communications to a simulation system, comprising the steps of:

a data network having a server and two or more
5   client systems;

wherein a first client system is operable to sample audio input, resulting in sampled audio data, and to transmit the sampled audio data to the server;

wherein the server is operable to process the
10   sampled audio input, by applying at least one transceiver model and at least one impairment model, wherein the transceiver model injects transceiver effects into the sampled audio input and the impairment model injects transmission effects into the sampled audio input,
15   thereby resulting in processed audio data; and to transmit the processed audio data to a second client system;

wherein the second client system is operable to receive the processed audio data, and to convert the
20   processed audio data to an analog audio signal.

17.   The system of Claim 16, wherein the server further provides tactile simulation data to the second client system, such that an operator of the second client
25   system may select a transceiver, and wherein the second client system transmits data representing the selected transceiver to the server such that the selected transceiver corresponds to the transceiver model.

18.   The system of Claim 16, wherein the server further provides visual simulation data to the second client system, such that the second client system provides a visual display corresponding to control of one or more audio qualities of the audio communications.

19.   The system of Claim 16, wherein the simulation system provides a visual simulation, and further comprising the step of providing a visual display depicting one or more audio qualities of the audio communications.

20.   The system of Claim 16, wherein the transceiver model represents at least a type of receiver, transmitter, or transceiver.

21.   The system of Claim 16, wherein the transceiver model represents at least the transceiver power.

22.   The system of Claim 16, wherein the impairment model represents one or more attributes from the following group: channel fading, multi-path fading, propagation delay, noise (including Gaussian), Doppler shift effects, and gain control.

23.   The system of Claim 16, wherein the transceiver model represents a wireless receiver and the impairment model represents one or more attributes from the following group: filtering, noise injection, line-of-sight effects, propagation losses, and signal fading.

24. The system of Claim 16, wherein either the first client system or the second client system or both are transceiver systems.

5   25. The system of Claim 16, wherein the impairment model uses dynamic simulated entity data.

26. The system of Claim 16, wherein the dynamic simulated entity data is velocity data of the first
10   client system or the second client system or both.

27. The system of Claim 16, wherein the dynamic simulated entity data is the distance between the first client system and the second client system.

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28. The system of Claim 16, wherein the impairment model is a multipath model, based on velocity of the second client system and radio frequency.

20   29. The system of Claim 16, wherein the impairment model is a Doppler effects model, based on velocity of the second client system and the angle between the first client system and the second client system.

25   30. The system of Claim 16, wherein the impairment model is a channel noise model, based on Gaussian noise generator output data whose level is controlled by path gain.

30   1